

Appl. No. 10/538,840  
Amendment dated: March 18, 2009  
Reply to OA of: December 18, 2008

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

Claims 1-26(canceled).

27(previously presented). An isolated polynucleotide which encodes for a protein with trans-sialidase activity, wherein said polynucleotide can be isolated from *Trypanosoma congolense* and which comprises one of the nucleic acid sequences selected from the group consisting of SEQ ID NO: 1 and 3; the polynucleotides complementary to the same; or nucleotide sequences differing from said polynucleotides by degeneration of the genetic code.

28(previously presented). The isolated polynucleotide of claim 27, which encodes for a protein with trans-sialidase activity and catalyzes the transfer of sialic acid from a donor onto an acceptor molecule.

29(previously presented). An isolated oligonucleotide, which hybridizes with a polynucleotide of claim 27 or 28 under stringent conditions comprising washing at 20-25°C for 5-10 minutes with 2xSSC buffer containing 0.1 % SDS and a subsequent washing with a buffer of 0.1 x SSC buffer with 0.1 % SDS, at a temperature of 64°C.

30(previously presented). An isolated polynucleotide, which hybridizes with an oligonucleotide of claim 29 under stringent conditions, comprising washing at 20-25°C for 5-10 minutes with 2xSSC buffer containing 0.1 % SDS and a subsequent washing with a buffer of 0.1 x SSC buffer with 0.1 % SDS, at a temperature of 64°C, and encodes for a gene product of microorganisms of the *Trypanosoma* genus.

31(currently amended). An isolated polypeptide, which is encoded by [[an]] the isolated polynucleotide of claim 27 or 28, wherein the isolated polypeptide is encoded by the nucleic acid sequence of SEQ ID NO: 1 or 3.

32(previously presented). An isolated trans-sialidase obtainable from *Trypanosoma congolense*, characterized by one of the following amino acid part sequences:

TDTVKYSTDGGRTWKREVIIPNGR (pos. 1 to 25 of SEQ ID NO: 2) or  
FRIPSLVEIDGVLIATFDTRYLRASDSSLI (pos. 1 to 30 of SEQ ID NO: 4).

33(currently amended). The isolated trans-sialidase of claim 32, wherein the isolated trans-sialidase consists of the amino acids of SEQ ID NO: 2 and is characterized by at least one of the following characteristics:

- i) Temperature optimum 30-40°C
- ii) pH optimum pH 6.5-8.5
- iii) Isoelectric point pH 4-5
- iv) Molecular weight, native 400-600 kDa
- v) Molecular weight in the reducing SDS page 90 kDa \_

34(currently amended). The isolated trans-sialidase of claim 32, wherein the isolated trans-sialidase consists of the amino acids of SEQ ID NO: 4 and is characterized by at least one of the following characteristics:

- i) Temperature optimum 30-40°C
- ii) pH optimum pH 6.5-8.5
- iii) Isoelectric point pH 5-6
- iv) Molecular weight, native 120-180 kDa
- v) Molecular weight in the reducing SDS page 90 kDa \_

35(previously presented). The isolated polynucleotide of claim 27, isolated from the *Trypanosoma congolense* organism.

36 (canceled).

37(canceled).

38(previously presented). An isolated nucleotide sequence, encoding a trans-sialidase of claim 32.

39(previously presented). An expression cassette, comprising, operatively linked to with at least one regulative nucleic acid sequence, a nucleic acid sequence of claim 38.

40(previously presented). A recombinant vector, comprising at least one expression cassette of claim 39.

41(previously presented). Procaryotic or eucaryotic host, transformed with at least one vector of claim 40.

42(currently amended). A method for the enzymatic sialization of an acceptor molecule, characterized in that the acceptor molecule is incubated with a donor containing sialic acid residues in the presence of an enzyme of claim [[31]] 32, and the sialylated acceptor is isolated.

43(previously presented). The method of claim 42, characterized by at least one more of the following properties:

- a) the donor is selected from the group consisting of sialic acids bonded to oligosaccharides, polysaccharides, polysialic acids, glycoproteins and glycolipids.
- b) the acceptor is selected from the group consisting of polymers containing  $\beta$ -

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galactose, such as  $\beta$ -galactooligosaccharides, lactitol, lactobionic acid, methyl- $\beta$ -lactoside, acetyllactosamines, galactopyranosides, trans-galactooligosaccharides, polygalactose and other glycoconjugates with terminally bonded  $\beta(1-3)$  or  $\beta(1-4)$  galactose or galactose.

44 (canceled).

45(previously presented). A method for the isolation of an enzyme with trans-sialidase activity as defined in claim 32, comprising:

*cultivating Trypanosoma congolense* in a medium so that said *Trypanosoma congolense* expresses the trans-sialidase,

obtaining a culture supernatant containing said trans-sialidase, and

isolating the trans-sialidase from the culture supernatant with exchange chromatography by applying a salt gradient.

46(previously presented). The method of claim 45, additionally comprising isoelectric focussing, gel filtration, affinity chromatography and/or protein precipitation.

47(canceled).

48(previously presented). A foodstuff or food additive comprising the isolate of claim 32.